



**PATENT**  
Attorney Docket No. ASC-023DVC2  
(058420/158126)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANTS: Fitzgerald  
SERIAL NO.: 10/022,689 GROUP NO.: 2813  
FILING DATE: December 17, 2001 EXAMINER: Laura M. Schillinger  
TITLE: CONTROLLING THREADING DISLOCATION DENSITIES IN Ge  
ON Si USING GRADED GeSi LAYERS AND PLANARIZATION

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**COMMENTS ON PRE-APPEAL BRIEF REQUEST FOR REVIEW**

This paper is submitted along with a Pre-Appeal Brief Request for Review in accordance with the Official Gazette Notice dated July 12, 2005, and a Notice of Appeal in response to the Office action mailed by the U.S. Patent and Trademark Office on June 14, 2006. A check for payment of the fee for filing the Notice of Appeal is submitted herewith. Applicants believe that no additional fee is required for this submission to be entered. However, please consider this a conditional petition for the proper extension, if one is required, and a conditional authorization to charge any related extension fee, or any other fees, necessary for entry of this submission to Deposit Account No. 07-1700.

Applicants' **Remarks** begin on page 2 of this paper.

### REMARKS

The Examiner has failed to consider two essential elements of independent claim 35 in rejecting that claim, along with its dependent claims 44 and 45, under 35 U.S.C. § 102(a) over U.S. Patent No. 5,937,274 to Kondow et al. (“Kondow”). We therefore respectfully submit that the rejection is improper.

In particular, independent claim 35 recites a method including the steps of providing a graded semiconductor region incorporating a first type of strain and processing the graded region so as to introduce a second type of strain. Kondow does not teach or suggest a method incorporating a graded semiconductor region or processing to induce strain. In fact, Kondow is no more relevant to independent claim 35 than was the reference previously used to reject the claim—a rejection withdrawn after a previous Pre-Appeal Brief Request for Review.

In the disclosure cited by the Examiner, Kondow describes the basic theory of stress compensation in strained layers, e.g., the deposition of a compressively strained layer on top of a tensilely strained layer. Kondow applies this technique to form superlattice layers, in which the pairing of compressive and tensile layers is repeated for several periods. *See*, e.g. Kondow, column 4, lines 47-67, and column 5, lines 12-25. However, this abrupt alternation of compressive and tensile layers is the very antithesis of grading, in which a strain or concentration is changed gradually in a single direction in a single layer. *See*, e.g., Specification, Figure 3 and related text, as well as <http://dictionary.reference.com/browse/grading>, wherein grading is defined as “the act of arranging in a graduated series.”

Moreover, not only does Kondow not disclose grading, but he also does not disclose processing the graded region so as to introduce a second type of strain. Kondow’s technique of stress compensation relies on the deposition of further strained layers, not on the processing of an existing layer. Indeed, the very fact that Kondow must resort to new-layer deposition in order to achieve strain confirms his inability to impart strain using process techniques. *See* Kondow, column 4, lines 47-53.

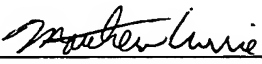
**CONCLUSION**

We respectfully submit that, as set forth in the foregoing remarks, there are clear errors in the Examiner's rejections.

Respectfully submitted,

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